

Appl. No. 10 791,399
Response dated November 7, 2007
Reply to Office Action of August 21, 2007

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): An airbag inflator diffusion system, comprising:
an airbag inflator having an exhaust gas exit port;
a sleeve having a longitudinal axis and shaped to receive the inflator securely within the sleeve, the sleeve expanding radially under a force of impinging exhaust gas, the sleeve comprising a structural stop to limit the radial expansion of the sleeve; and

at least two crimped tabs being added to a proximal end of the sleeve and at least two crimped tabs being added to a distal end of the sleeve, wherein the crimped tabs are folded inward to hold the inflator within the sleeve during deployment, wherein when the crimped tabs are folded inwards, the tabs are substantially transverse perpendicular to the longitudinal axis of the sleeve, and wherein when the sleeve expands radially under the force of the impinging gas, the crimped tabs move radially outwardly away from each other.

Claim 2 (original): The inflator diffusion system of claim 1, wherein the structural stop comprises a tab and a perforation, such that the tab is shaped to engage the perforation upon radial expansion of the sleeve to limit expansion.

Claim 3 (original): The inflator diffusion system of claim 1, wherein the structural stop comprises a hook and a perforation, such that the hook engages the perforation upon radial expansion of the sleeve to limit expansion.

Claim 4 (original): The inflator diffusion system of claim 1, wherein a first longitudinal edge of the sleeve overlaps a second longitudinal edge along a length of the sleeve.

Claim 5 (original): The inflator diffusion system of claim 4, wherein the first longitudinal edge is slidably movable with respect to the second longitudinal edge under the force of impinging exhaust gas.

Claim 6 (original): The inflator diffusion system of claim 1, wherein a perforation in the sleeve becomes exposed upon radial expansion of the sleeve.

Claim 7 (original): The inflator diffusion system of claim 6, wherein the perforation is positioned to allow exhaust gas to flow out of the sleeve through the perforation and into an inflatable cushion.

Claim 8 (original): The inflator diffusion system of claim 6, wherein the perforation overlays a portion of the inflator excluding the exit port.

Claim 9 (original): The inflator diffusion system of claim 1, wherein the inflator is an elongate inflator and the sleeve extends a length of the elongate inflator.

Claim 10 (original): The inflator diffusion system of claim 1, wherein the structural stop allows the sleeve to expand radially a predetermined amount.

Claim 11 (canceled)

Claim 12 (original): The inflator diffusion system of claim 1, wherein the radial expansion of the sleeve forms an exhaust passage between the sleeve and the inflator.

Claim 13 (original): The inflator diffusion system of claim 12, wherein the sleeve comprises a solid section positioned to receive direct impingement of the exhaust gas from the exit port and direct the exhaust gas through the exhaust passage.

Claim 14 (original): The inflator diffusion system of claim 1, wherein a cross-sectional shape of the sleeve is substantially the same as a cross-sectional shape of the inflator.

Claim 15 (original): The inflator diffusion system of claim 1, wherein the sleeve has a mounting stud extending orthogonally therefrom.

Claim 16 (currently amended): An airbag inflator diffuser, comprising:
a sleeve having a longitudinal axis and having a first longitudinal edge that overlaps a second longitudinal edge along a length of the sleeve, the sleeve expanding radially under a force of impinging exhaust gas from an exit port of an inflator when installed within the sleeve;
a structural stop to limit the radial expansion of the sleeve; and
at least two crimped tabs being added to a proximal end of the sleeve and at least two crimped tabs being added to a distal end of the sleeve, wherein the crimped tabs are folded inward to hold the inflator within the sleeve during deployment, wherein when the crimped tabs are folded inwards, the tabs are substantially transverse perpendicular to the longitudinal axis of the sleeve, and wherein when the sleeve expands radially under the force of the impinging gas, the crimped tabs move radially outwardly away from each other.

Claim 17 (original): The diffuser of claim 16, wherein the structural stop allows the sleeve to expand radially a predetermined amount.

Claim 18 (original): The diffuser of claim 17, wherein the structural stop comprises a tab and a perforation in the sleeve, such that the tab is shaped to engage the perforation upon radial expansion of the sleeve to limit expansion.

Claim 19 (original): The diffuser of claim 17, wherein the structural stop comprises a hook and a perforation in the sleeve, such that the hook engages the perforation upon radial expansion of the sleeve to limit the expansion.

Claim 20 (original): The diffuser of claim 18, wherein the perforation is adjacent the first longitudinal edge and the tab is adjacent the second longitudinal edge.

Claim 21 (original): The diffuser of claim 20, wherein the first longitudinal edge is slidably movable with respect to the second longitudinal edge under the force of impinging exhaust gas.

Claim 22 (original): The diffuser of claim 21, wherein the perforation becomes exposed upon radial expansion of the sleeve.

Claim 23 (original): The diffuser of claim 22, wherein the perforation is positioned to allow exhaust gas to flow out of the sleeve through the perforation and into an inflatable cushion.

Claim 24 (original): The diffuser of claim 23, wherein the perforation overlays a portion of the inflator excluding the exit port.

Claim 25 (original): The diffuser of claim 24, wherein the radial expansion of the sleeve forms an exhaust passage between the sleeve and the inflator.

Claim 26 (original): The diffuser of claim 25, wherein the sleeve comprises a solid section positioned to receive direct impingement of the exhaust gas from the exit port and direct the exhaust gas through the exhaust passage.

Claim 27 (original): The diffuser of claim 17, wherein the sleeve is shaped to extend a length of an elongate inflator.

Claim 28 (original): The diffuser of claim 27, wherein a cross-sectional shape of the sleeve is substantially the same as a cross-sectional shape of the inflator.

Claim 29 (original): The diffuser of claim 16, wherein the sleeve has a mounting stud extending orthogonally therefrom.

Claim 30 (currently amended): An airbag inflator diffusion system, comprising:

an airbag inflator having an exhaust gas exit port;

a sleeve having a longitudinal axis and having a first longitudinal edge that overlaps a second longitudinal edge along a length of the sleeve, the sleeve expanding radially to form an exhaust passage under a force of impinging exhaust gas from the exit port of the inflator installed within the sleeve, the sleeve having a perforation adjacent the first longitudinal edge and a tab adjacent the second longitudinal edge, such that the tab is shaped to engage the perforation upon radial expansion of the sleeve to limit expansion; and

at least two crimped tabs being added to a proximal end of the sleeve and at least two crimped tabs being added to a distal end of the sleeve, wherein the crimped tabs are folded inward to hold the inflator within the sleeve during deployment, wherein when the crimped tabs are folded inwards, the tabs are substantially perpendicular transverse to the longitudinal axis of the sleeve, and wherein when the sleeve expands radially under the force of the impinging gas, the crimped tabs move radially outwardly away from each other.

Claim 31 (withdrawn): A method for fabricating an airbag inflator diffuser, comprising:
providing a rectangular blank of sheet metal having a first and second longitudinal edge;
forming one or more perforations adjacent the first longitudinal edge;
forming one or more tabs adjacent the second longitudinal edge directly opposite the perforations:

rolling the blank such that the first longitudinal edge overlaps the second longitudinal edge to form a substantially cylindrical sleeve; and

folding the one or more tabs through the one or more perforations.

Claim 32 (withdrawn): The method of claim 31, wherein forming one or more perforations comprises stamping the blank in a die shaped to form one or more perforations along a length of the blank, such that the one or more perforations are positioned to overlay a portion of an inflator excluding an exit port when installed within the diffuser.

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Claim 33 (withdrawn): The method of claim 31, further comprising press fitting an inflator within the sleeve so that one or more exit ports on the inflator are covered by one or more solid sections of the sleeve.

Claim 34 (withdrawn): The method of claim 33, further comprising crimping the sleeve after the inflator is inserted into the sleeve to limit axial movement of the inflator within the sleeve upon activation.